

BMJ Open 'It's a powerful message': a qualitative study of Australian healthcare professionals' perceptions of asthma through the medium of drawings

Melissa Mei Yin Cheung,¹ Bandana Saini, Lorraine Smith

To cite: Cheung MMY, Saini B, Smith L. 'It's a powerful message': a qualitative study of Australian healthcare professionals' perceptions of asthma through the medium of drawings. *BMJ Open* 2019;**9**:e027699. doi:10.1136/bmjopen-2018-027699

► Prepublication history and additional material for this paper are available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2018-027699>).

Received 9 November 2018
Revised 22 February 2019
Accepted 6 March 2019



© Author(s) (or their employer(s)) 2019. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

School of Pharmacy, Faculty of Medicine and Health, The University of Sydney, Camperdown, New South Wales, Australia

Correspondence to

Melissa Mei Yin Cheung;
melissa.cheung@sydney.edu.au

ABSTRACT

Objectives This study aimed to explore healthcare professionals' (HCPs') perspectives of asthma through their drawings, and their responses when viewing patients' drawings of their experiences of asthma.

Design A qualitative exploratory study with a purposive, convenience sample of participants. Participants were asked to first express their perspectives of asthma in a drawing, which was followed by a review of drawings made by patients with asthma.

Setting Primary and tertiary HCPs from Sydney, Australia.

Participants Twenty-three HCPs from a range of health professions.

Results The HCPs illustrated their perspective of asthma through drawings which were largely biomedically framed, depicting physiological and clinical aspects of asthma. In contrast, their discussion around the patients' drawings centred on the person more than the condition. The patients' drawings triggered the HCPs to revisit their personal expectations of their patients' illness experience; prompted differing degrees of acknowledgement and empathy regarding the patient experience; and encouraged clinical reflexivity.

Conclusions Our findings provide support for the educational application of patients' drawings in bringing HCPs closer to the patient lived experience. The drawings fostered deeper insight into patient perspectives of asthma and stimulated critical reflection on current healthcare practices.

INTRODUCTION

There is growing momentum for 'arts and health' in research, education and therapy.^{1,2} According to the Australian National Arts in Health Framework and the UK National Alliance for Arts, Health and Wellbeing, arts and health refers to the application of arts-based initiatives to health problems and promotion.³ One example is using art forms as learning and teaching strategies to enhance health professionals' (HCPs') development.⁴ Indeed, the literature provides evidence for the utility of such strategies. For example, Toye *et al* highlighted how viewing a film which communicated the lived experience

Strengths and limitations of this study

- This is the first study to explore healthcare professionals' (HCPs') insights into patients' lived experience of asthma through the medium of drawings.
- The perspectives of patients with asthma were incorporated into the study through their drawings.
- Participants included HCPs from both primary and tertiary health settings.
- There were fewer medical and more allied HCPs.

of chronic pain shifted the perception of HCPs from viewing pain as a purely physical symptom to understanding the whole patient perspective.⁵ Similarly, viewing a dramatised version of research exploring the experience of those living with dementia altered participating HCPs' understanding of the condition and their intended clinical actions.⁶ Theoretical models, such as the Vienna Integrated Model of top-down and bottom-up processes in Art Perception (VIMAP),⁷ have shown that there are cognitive and affective processing sequences leading to enhanced insight, self-reflection and decision-making when viewing visual art. There is potential for integrating evidence from arts-based health activities into clinical practice and influencing clinical decision-making, empathy and communication, and, in turn, health outcomes.⁸ However, to date, the use of art forms to engage HCPs in respiratory medicine has not been explored in terms of changing HCP insight.

It is not uncommon for patients and HCPs to have contrasting views about health and illness, particularly in chronic conditions.^{9–11} Asthma is a chronic lung condition, clinically defined as the combination of variable respiratory symptoms, including wheeze, breathlessness, cough and chest tightness and excessive fluctuations in lung function due to widespread airway narrowing.¹² It is estimated that 300 million people of all ages and ethnic

backgrounds are affected by asthma worldwide.¹³ In Australia, 1 in 10 adults and children have asthma, equivalent to over 2 million Australians.¹⁴ Global and Australian guidelines emphasise the need for partnerships and shared decision-making between patients and HCPs in asthma management.^{13 15} Research shows that there are differing perspectives regarding asthma control, care and medication between patients and HCPs.^{16–18} If there is a poor fit between the patient's perceptions and HCP's recommendations, there is a risk that the advice provided may not be comprehended or it may not be perceived by the patient to be relevant.¹⁹ While studies report differing patient and HCP perspectives, there are very few that explore the responsiveness or reflection of HCPs when they face the expressed viewpoint of patients. This latter step is key to ensuring constructive alignment between patient and HCP viewpoints around asthma management.

There is accumulating research highlighting the psychosocial impact of asthma.^{20 21} In our preceding research study, drawings were used as a medium to explore adult patients' perceptions and experiences of asthma.²² In this study, adult patients with asthma were provided opportunities to express their experience in the form of drawings; thematic analysis of drawn works indicated that psychosocial consequences of asthma weighed largely in their drawn expressions. For example, the physical nature of asthma was illustrated metaphorically by patients as a thorny vine around the lungs or a black noose around the neck. Negative effects on social interaction, personal identity and disclosure were also common issues that were expressed within participating patients' drawings. The journey as a person living with asthma was depicted as one that involves a dynamic relationship with the condition.

While the aforementioned study explored patient perceptions of the lived asthma experience, there is minimal literature around HCPs' insight into or expressions about what they perceive living with asthma is like for their patients. Rather, studies reporting HCP perspectives have focused on clinical areas such as asthma inhaler preference,^{23 24} medication adherence²⁵ and interventions.^{26 27} As art allows creative expression of ideas and emotions that are not easily expressed in words, this would be a good medium for exploring both patient and HCP views. Engaging HCPs using drawings would further our understanding of their perceptions of the patient experience, as well as their readiness and responsiveness to patients' creative expressions of their experiences. This study therefore aimed to explore HCPs' perspectives of asthma through their drawings, and their responses when viewing patients' drawings of their experiences of asthma.

METHODS

Patient and public involvement

Findings from our scoping literature review reporting on research into patients' drawings of their experiences of illness²⁸ underpinned this study. The research questions

and study design were informed by patients' drawings of their experiences of asthma from our previous study.²²

Participants and recruitment

Participant recruitment from metropolitan Sydney, Australia, occurred through not-for-profit organisations, advertisements at a university and purposive snowball sampling. A passive approach to sampling was taken whereby researchers provided third parties with recruitment information, which the third parties shared with their networks or potential participants, and the potential participants then contacted the researchers directly for more information if they were interested in taking part in the study. HCPs from a range of professions who were fluent in written and spoken English were included. HCPs took part in a one-on-one, in-person session; the same researcher (MMYC) conducted all the sessions. They received an \$A50 gift voucher as reimbursement for their time. Further details about the study are presented in online supplementary materials 1 and 2.

Materials and procedure

The sessions were held at HCPs' workplaces, venues within the University of Sydney or at public libraries in metropolitan Sydney, Australia, in 2017. All participants provided written informed consent prior to the sessions. HCPs answered a demographic questionnaire; participated in a drawing activity and were invited to share their responses after viewing a collection of patients' drawings.

HCP drawing activity

HCPs were offered blank sheets of A4 paper (bound in a visual diary) and a range of drawing materials (graphite pencils, coloured pencils, crayons, ballpoint pen, fine-liner pen, eraser, sharpener). Instructions were provided to participants verbally by the researcher following a standardised script (online supplementary material 2). HCPs were asked to freely draw their perceptions of patients' experiences of asthma. The researcher reassured participants that artistic skill was not important; rather their views were the focus of this activity. There was no time limit on the drawing activity. The researcher stayed in the room but moved away from participants to give them space.

When the HCPs were finished with their drawings, they were asked to describe their drawings to aid appropriate interpretation. This discussion was guided by Guillemín's adaptation²⁹ of Rose's critical visual methodology framework,³⁰ which explores the process of image production, the composition of the image and the relationship between the image and the audience. This open-ended framework has been used to assist in the interpretation of participants' drawings in a range of health conditions.^{31–33} Using this framework, prompting questions were posed around the drawings' content, representations, colours, orientation, as well as participants' thoughts and feelings. The HCPs' descriptions of their drawings were voice recorded.

Discussion around patient drawings

The HCPs were shown original drawings made by adult patients about their perceptions and personal experiences of asthma. Fifteen out of the 18 patients who participated in our previous study²² consented to their drawings being shown to HCPs. These patients were not in a patient–provider relationship with participating HCPs. Eighteen A4 pages of patient drawings were placed sequentially by participant number in a display folder; all HCPs viewed the same drawings in the same order. The content of these drawings ranged from having literal to abstract representations. As drawings can be interpreted subjectively in various ways, the researcher relayed and clarified the meanings of the patients' drawings as per the patients' own descriptions. The HCPs were then invited to share their impressions of the patients' drawings; this was voice recorded.

Demographic and professional information

Data regarding gender, age, occupation, years of practice, types of practice and locations of practice were gathered.

Data analysis

The HCPs' narrated descriptions of their own drawings and their responses to the patients' drawings were transcribed verbatim. For the HCPs' drawings, the interview transcripts were examined alongside the relevant images and the described topics were summarised. For the HCPs' discussion around patient drawings, a qualitative approach using a coding process was used to cluster thematic material. This involved an iterative process of constantly comparing data, codes and categories within and across cases, and moving from initial tentative categories towards progressively abstracted themes that are grounded in the data. This process was performed by two independent researchers (MMYC, LS) and consensus was reached regarding assigned codes and emergent themes.

RESULTS

Participant characteristics

Twenty-three HCPs participated in the study. The sample consisted of more women (87%) than men (13%). Sample sociodemographic characteristics are summarised in table 1.

Content analysis of HCPs' drawings

The HCPs' drawings about their perceptions of patients' experiences of living with asthma were presented with a predominately biomedical framing of asthma. Physiological characteristics and aspects of clinical management were prominent. This included anatomical illustrations of the lungs (figure 1), symptoms of breathing difficulties (figure 2), asthma inhaler medications and devices (figure 3), triggers of asthma and comorbidities.

Aside from the biomedical aspects of asthma, HCPs drew about patients being 'less functional' due to asthma. This referred to people taking time off work and school

Table 1 Characteristics of the participants, including gender, age, years of practice, occupation, types of practice, locations of practice and asthma status (n=23)

	Number (%)
Gender	
Men	3 (13.0)
Women	20 (87.0)
Age, mean±SD (range)	37.4±13.2 (23–62)
Years of practice, mean±SD (range)	14.6±13.6 (1–40)
Occupation	
Respiratory physician	2 (8.7)
General practitioner	3 (13.0)
Pharmacist	10 (43.5)
Nurse	5 (21.7)
Physiotherapist	3 (13.0)
Type(s) of practice	
Private practice only	12 (52.2)
Public practice only	5 (21.7)
Private and public practice	6 (26.1)
Location(s) of practice	
Metropolitan	18 (78.3)
Metropolitan and regional	2 (8.7)
Metropolitan and remote	3 (13.0)
Asthma status*	
Has asthma personally	2 (8.7)
Has family member(s) with asthma	2 (8.7)
No asthma personally nor family member with asthma	15 (65.2)
Missing*	4 (17.4)

*The initial interviews did not ask about asthma status. With continuous refinement of the interview guide, this question was added. Participants of earlier interviews were recontacted to request for this information. However, four participants were lost to follow-up and hence their asthma status data were reported as 'missing'.

(figure 2), and physical limitations, especially when outdoors. The psychological effects of asthma were largely framed with a biomedical lens, and the HCPs described their illustrations as representing fearful acute exacerbations and frustration regarding medication use (figure 4).

Themes from HCPs' discussion around patients' drawings

The HCPs' responses to the patients' drawings had a temporal aspect to them; this involved an initial personal response, which was followed by a deeper reflection regarding clinical practice implications. Unlike their own drawings, their discussion around the patients' drawings focused on the person rather than the condition, and reflected a view beyond that of a biomedical perspective. The three themes that emerged from the analyses were: (1) revisiting expectations, (2) acknowledgement

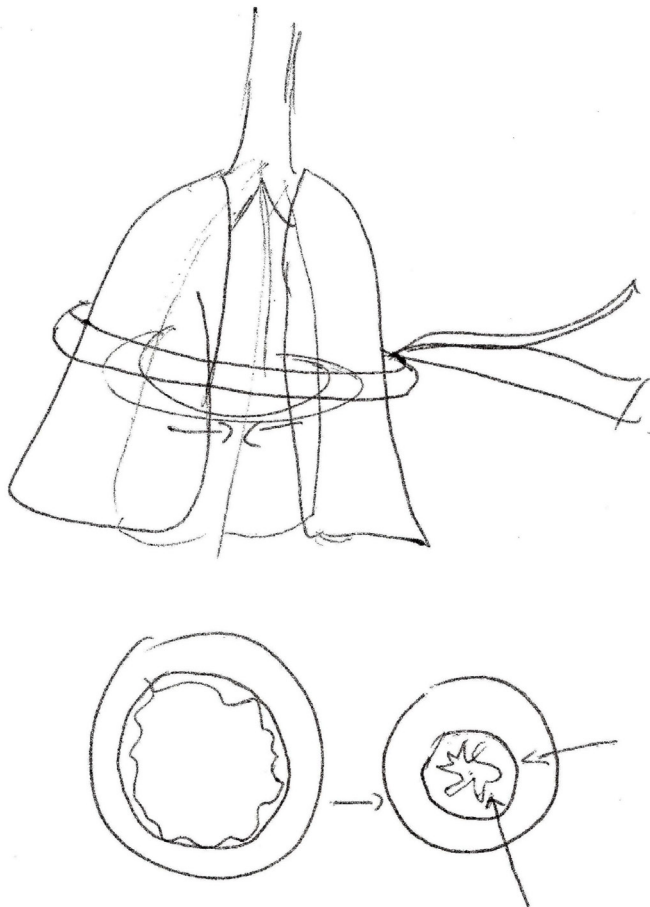


Figure 1 Healthcare professional's drawing of lung tightness and airway inflammation during asthma exacerbations (participant 22, female, general practitioner).

and empathy, and (3) clinical reflexivity. The themes described are supported with quotations from the interview transcripts. Online supplementary material 3 presents several patients' drawings for reference.

Theme 1: revisiting expectations

The patients' drawings captured the HCPs' attention; they described the illustrations as: 'very surprising', 'striking', 'intense', 'confronting', 'interesting', 'vivid', 'visually hits you', 'dramatic', 'drastic', 'eye opening' and 'alarming.' The drawings challenged the HCPs' personal expectations around patients' lived experiences of asthma, and fostered deeper insight into the related complexities and nuances. Most HCPs did not anticipate portrayals of the profound emotional burden and social restrictions asthma had placed on patients.

I see a lot of tears, strangulation, sad faces, missing out, preoccupation, feeling anxious and trapped ... It is much more dramatic than what I would expect. (Participant 20, female, general practitioner)

This is very surprising that you would consider that it [asthma] would be something violent like a knife and blood. (Participant 1, male, respiratory physician)

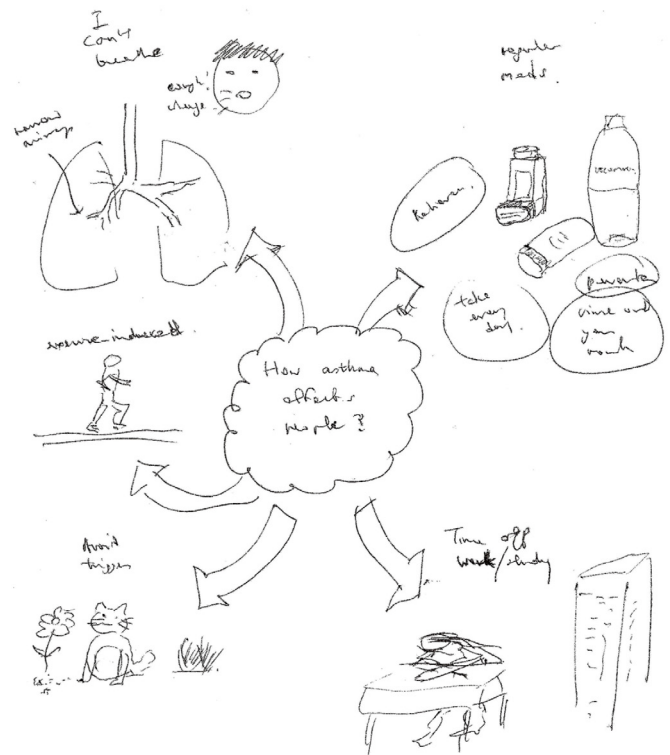


Figure 2 Healthcare professional's drawing of how asthma can affect patients: symptoms of cough and wheeze, regular medication, trigger avoidance and taking time off work and studies (participant 1, male, respiratory physician).

The HCPs expressed that the patients' drawings of the lungs were unlike their medical illustrations with anatomical features (figure 1), but rather represented 'feelings' through the use of colour and metaphors. Patients' artworks of a black noose around the neck, breathing through a straw, and a thorny vine constricting a pair of red lungs, communicated to the HCPs 'what it feels like to not be able to breathe' beyond that of the symptom labels such as 'breathlessness' and 'chest tightness'.

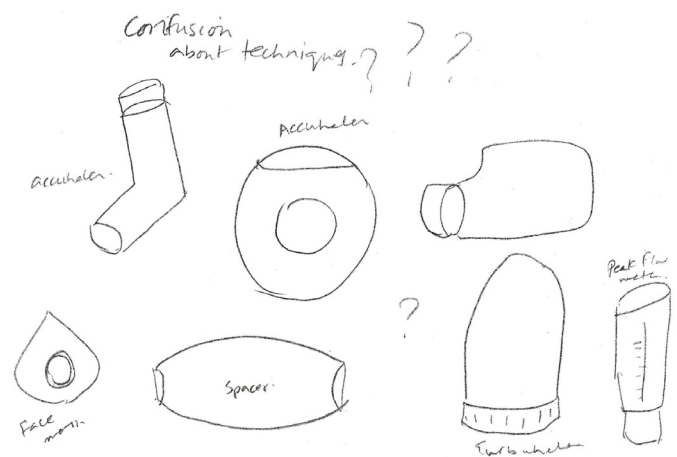


Figure 3 Healthcare professional's drawing of the large variety of asthma inhalers and devices, which may cause confusion for patients (participant 20, female, general practitioner).



Figure 4 Healthcare professional's drawing of a patient's frustration about the inconvenience of needing to use asthma medications (participant 4, female, pharmacist).

I feel restriction in all these paintings and drawings. I feel restriction, frustration, sadness. I see helplessness at times, comparison with what is normal, other people, emotions, negative emotions, and very physical. (Participant 21, female, physiotherapist)

While the HCPs perceived themselves to be proficient in the biomedical aspects of the condition, they felt less sure about their understanding of patients' lived experiences.

A lot of these images were quite in a way confronting, because, like I say, I have never dealt with it personally, so I do not really understand what it is really like for them [patients]. So I can only get it from a medical perspective. (Participant 2, female, pharmacist)

Theme 2: acknowledgement and empathy

The drawings stimulated the HCPs to compare their own perspective with those portrayed by patients. The HCPs shared varying degrees of recognition of and identification with the patient experience. A number of HCPs expressed their openness toward the diversity of the illness experience.

Interesting to see their [patients'] side of things. I suppose because I have got my perceptions ... It is really interesting. It has really opening my mind to how people see their illness. (Participant 6, female, nurse)

Several HCPs' responses to the drawings were on an affective level, expressing feelings of sadness and a desire to help the patients. These HCPs demonstrated

emotional identification with the patients' personal experiences; that is, they showed signs of empathy.

That is how I feel when I am looking at these drawings, I feel like crying ... It is making me quite emotional. (Participant 2, female, pharmacist)

I am also sad to see the pictures that depict people feeling that they are being left out and excluded I wish I had known this so then maybe we can adjust their management to try and improve that situation so they are not feeling left out. (Participant 11, female, pharmacist)

While some HCPs acknowledged and empathised with the patient experience, others had an alternative view. Several HCPs shared that they experienced difficulty in grasping the rationale for the patients' fear and concerns. They were puzzled as to why despite the availability of medication treating asthma, patients were continuing to face challenges emotionally and socially.

We always think of asthma like you know, it is a very common condition. Why worry about the diagnosis? In fact, it is a treatable thing ... The way we look at it, you know, like 'hey, you are very lucky if that is all that you have to have.' (Participant 1, male, respiratory physician)

I feel like a lot of people are drama queens ... I think there are worse conditions in life that you can be afflicted with. (Participant 12, female, pharmacist)

Theme 3: clinical reflexivity

The drawings prompted most participating HCPs to critically reflect on their understanding of patient experiences and how this impacts their practice. The HCPs shared their tendency to focus clinically on asthma symptoms and medications, which contrasted with the perspectives illustrated by patients. HCPs considered that they may not be tapping into and paying enough attention to the psychosocial consequences of asthma, which were well represented in the patients' drawings.

The HCPs' increased insight led to shifts in perspective, demonstrating potential to inform future clinical encounters. For example, an HCP shared that:

We can sometimes get a bit focused on ... the more medical, physiological side of things

However, seeing the patients' vivid illustrations of their psychological concerns, she acknowledged that this may have implications for communication with patients.

Address[ing] that more with patients would be a good idea ... If we are not able to get across at them [patients] from a medical point of view, helping to address that emotional side might help. (Participant 3, female, respiratory physician)

The negative elements in the drawings prompted reflection on the assumption that patients are offered adequate support.

Now that I think about it, they [patients] get diagnosed, does the doctor actually explain it to them? And then when they first get their medication, does the pharmacist talk to them about it? And then they just keep getting their repeats right? And then you go back to the doctor to get a review and get more meds or the same meds. It is like a vicious cycle. (Participant 7, female, pharmacist)

Likewise, the assumption that medications alone are sufficient in the management of asthma was questioned.

It is quite upsetting to see that one of your patients is suffering in a condition that is relatively simple to treat ... We have got advanced medicine and people are still feeling this way. (Participant 13, female, pharmacist)

The HCPs stated that they frequently received neutral responses when they asked how patients were coping with their asthma. They speculated whether patients were deliberately not sharing their concerns, or whether it was because they were not directly asked about these aspects. Several HCPs considered that their questions may not be specific enough and contemplated broadening their approach to encompass concerns regarding emotional and social well-being.

I guess my questions were never specific to say: how is this impacting on your day to day lifestyle? I guess the questions are too general ... more like: how are you finding your asthma? And they [patients] would say it is OK or I am fine. So they never give us that depth, but maybe I should be asking in a different way. (Participant 11, female, pharmacist)

I have not been able to assess that from patients, that real fear of death, that asthma might lead to them dying ... At least for me, patients have not voiced to me, or maybe I have not asked them [about] that acute fear of dying. (Participant 22, female, general practitioner)

While the HCPs expressed interest in using this medium to learn from and engage with patients, they also conveyed concerns regarding the practical aspects of this, in particular around time constraints during consultations.

Our main problem is there is heaps of stuff that we are supposed to do, and heaps of stuff we would like to do. But our main restriction is time ... But it [drawing] looks like a great idea. You can learn so much from what they [patients] are feeling. That was quite eye opening. (Participant 22, female, general practitioner)

DISCUSSION

This is the first study to explore HCPs' insights into patients' lived experiences of asthma through the medium of drawings. Our results highlight that drawings are a powerful medium that can be used to explore HCPs'

perceptions of asthma and for HCPs to appreciate their patients' experience of living with asthma on a daily basis. HCPs' insight into patients' lived experience of asthma is currently under-reported in the literature and there are as yet no published studies investigating this through the use of creative mediums such as that of drawing. Within our sample, the HCPs' illustrations of their perspectives were largely biomedically framed, depicting physiological and clinical aspects of asthma. Conversely, their discussion around the patients' drawings centred on the person more than the condition. The patients' drawings triggered the HCPs to revisit their personal expectations of the illness experience; prompted differing degrees of acknowledgement and empathy regarding the patient experience and encouraged clinical reflexivity.

The creation and viewing of drawings challenged the HCPs to reconsider their expectations and recognise that patients' experiences of asthma are associated with broader contexts, including but beyond that of the clinical manifestation of the condition. Psychosocial representations of patients' lived experiences being seen as unexpected by HCPs is an issue that has been reported in other research studies exploring art-based learning in other health conditions. For example, evaluation of a play based on research findings about the lived experience of traumatic brain injury found that the HCPs gained new knowledge and insight regarding the related social consequences after viewing the play.³⁴ Likewise, in a study where HCPs viewed a research-based film on chronic musculoskeletal pain, depictions of the loss of personal identity and hidden suffering struck the HCPs as aspects they had not considered.³⁵ Our findings provide further support for art-based activities in communicating the complexities of patients' lived experiences to HCPs and challenging preconceived, often biomedical, views.

The current conception of HCPs as the experts of knowledge favours *professional* ways of knowing over *patient* ways of knowing.³⁶ This limits opportunities for encouraging patients' right to choose and identifying patients' personal concerns, values and goals. Undermining patients' views can hinder the formation of collaborative alliances and mutually respectful partnerships with patients.³⁷ An open and mindful approach encourages communication expressing empathy, rather than judgement and mistrust.³⁸ In our study, emotional resonance with the patients' personal experiences and appreciation of the diversity in perspectives were evident when the HCPs viewed the patients' illustrations. Previous qualitative research has been positive regarding the value of the arts in promoting empathic understanding for HCPs. Engaging with an art therapy exhibit by people living with mental illness prompted participating HCPs to identify with the artists' feelings, and they voiced a desire to assist the artists.³⁹ Art-based teaching in medical education demonstrated comparable findings on how creative approaches stimulated appreciation and understanding of differences in people's views and experiences.⁴⁰ Through facilitation of non-judgemental and

collaborative approaches, art-based mediums, such as patients' drawings, encourage HCPs to consider multiple ways of seeing and knowing. This is a promising step forward in engaging HCPs in the humanistic aspects of healthcare. It is important to acknowledge that quantitative studies have conflicting findings in their evaluation of the efficacy of art-based programmes on HCP empathy.^{41 42} While our study did not investigate changes in empathy using a quantitative measure, future studies could consider the use of validated measures such as the Jefferson Scale of Physician Empathy⁴³ to longitudinally evaluate the effectiveness of patient drawings in enhancing HCP empathy.

Comparison of the HCPs' own illustrations of asthma and their subsequent discussion around patients' drawings showed a shift from a biomedical focus on the treatment and consequences of asthma to a more biopsychosocial perspective. This shift represented elements of person-centred care, for which there is strong international interest and enthusiasm in the health arena.^{44 45} It is argued that if the support HCPs provide is condition orientated, it is unlikely to be compatible with the aspirations of person-centred practice.³⁸ Awareness and appreciation of people's emotional and social well-being can identify broader means of supporting people to live well with long-term conditions.³⁷ This was demonstrated when the patients' illustrations prompted perceptive articulation and reflection regarding the HCPs' assumptions about the adequacy of support offered for patients living with asthma and whether this support should be restricted to medications alone. This process aligned with that of key models of art perception such as the VIMAP,⁷ where both cognitive and affective processing occurred when the HCPs interacted with the patients' drawings, leading to enhanced insight and self-reflection. It is also important to recognise the hurdles and tensions that present with shifting from a focus on disease control to a focus on enabling people to live well.³⁸ HCPs may not have a conducive environment during interactions with patients to probe in detail the patient experience and act on their empathy. For example, time constraints were quoted by HCPs as a major barrier to initiating these conversations with patients, both in our current study and in the literature.⁴⁶ Factors reported in other studies include, but are not limited to, organisational culture, resources and training.⁴⁷ Therefore, careful attention needs to be paid in policy, practice and research contexts to support HCPs in embracing this approach.

The strengths and limitations of this study deserve mentioning. Although we were able to sample HCPs from both primary (general practitioners, pharmacists and physiotherapists) and tertiary care (respiratory physicians and nurses), our study involved fewer medical and more allied HCPs. Future research involving HCPs from a wider national sample and in other countries would provide further understanding about how visual approaches can encourage HCP engagement in patients' lived experiences. Also, more research is needed to explore the

differential communicative impact of drawings, verbal discussion and written reports. However, our findings demonstrate that viewing and discussing around patients' drawings had valuable educational potential. Future work could investigate HCPs' changes to practice longitudinally after viewing patients' drawings, and the application of patients' drawings in continuing professional development and tertiary education in health.

CONCLUSION

This study demonstrated the capability of patients' drawings to communicate to HCPs patients' perspectives and promote appreciation of personal experiences. Despite an accumulating body of research emphasising the importance of the psychosocial effects of asthma,²⁰ these were the elements which the HCPs did not anticipate seeing in the patients' drawings. These elements in turn served as a starting point in engaging the HCPs in perceptive contemplation. Our findings provide support for the use of patients' drawings in bringing HCPs closer to the patient lived experience through fostering deeper insight and stimulating critical reflection on current practices.

Acknowledgements The authors would like to acknowledge and are grateful to the participants for their involvement in this study.

Contributors MMYC: conception and design of study; collection, analysis and interpretation of data; drafting and revising the manuscript critically; final approval of the version submitted. BS: conception and design of study; revising the manuscript critically; final approval of the version submitted. LS: conception and design of study; analysis and interpretation of data; drafting and revising the manuscript critically; final approval of the version submitted.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not required.

Ethics approval The University of Sydney Human Ethics Committee (HREC 2017/1004).

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement The data for this research consist of audio recordings of interviews, interview transcripts and drawings. The researchers (MMYC, LS and BS) have access to these data. All data are stored securely on password-protected and encrypted computers. Participants have not given their permission for data sharing outside the research group. Thus, no additional data are available.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

REFERENCES

1. Boydell KM, Gladstone BM, Volpe T, *et al*. The production and dissemination of knowledge: a scoping review of arts-based health research. *Forum Qual Soc Res* 2012;13:1–30.
2. Fraser KD, al Sayah F. Arts-based methods in health research: a systematic review of the literature. *Arts Health* 2011;3:110–45.
3. Meeting of Cultural Ministers & Standing Council on Health. *National arts and health framework*. Australia: Ministry for the Arts, 2014.
4. Jarvis C, Gouthro P. The role of the arts in professional education: surveying the field. *Studies in the Education of Adults* 2015;47:64–80.

5. Toye F, Jenkins S, Seers K, *et al.* Exploring the value of qualitative research films in clinical education. *BMC Med Educ* 2015;15:214.
6. Jonas-Simpson C, Mitchell GJ, Carson J, *et al.* Phenomenological shifts for healthcare professionals after experiencing a research-based drama on living with dementia. *J Adv Nurs* 2012;68:1944–55.
7. Pelowski M, Markey PS, Forster M, *et al.* Move me, astonish me... delight my eyes and brain: The Vienna Integrated Model of top-down and bottom-up processes in Art Perception (VIMAP) and corresponding affective, evaluative, and neurophysiological correlates. *Phys Life Rev* 2017;21:80–125.
8. Lake J, Jackson L, Hardman C. A fresh perspective on medical education: the lens of the arts. *Med Educ* 2015;49:759–72.
9. Morgans A, Burgess SJ. What is a health emergency? The difference in definition and understanding between patients and health professionals. *Aust Health Rev* 2011;35:284–9.
10. Silva SA, Costa PL, Costa R, *et al.* Meanings of quality of care: perspectives of Portuguese health professionals and patients. *Br J Health Psychol* 2013;18:858–73.
11. Celli B, Blasi F, Gaga M, *et al.* Perception of symptoms and quality of life - comparison of patients' and physicians' views in the COPD MIRROR study. *Int J Chron Obstruct Pulmon Dis* 2017;12:2189–96.
12. National Asthma Council Australia. Australian asthma handbook version 1.3. 2017 <http://www.astmahandbook.org.au>.
13. Global Initiative for Asthma. GINA report: global strategy for asthma management and prevention. 2018 www.ginasthma.org
14. Australian Institute of Health and Welfare. Asthma in Australia Canberra. 2017 <https://www.aihw.gov.au/reports/asthma-other-chronic-respiratory-conditions/asthma/contents/what-is-asthma>
15. Australian Health Ministers' Advisory Council. *National strategic framework for chronic conditions*. Canberra: Australian Government, 2017.
16. Rudell K, Hareendran A, Bonner N, *et al.* Patients' experience of asthma control and clinical guidelines: perspectives from a qualitative study. *Respir Med* 2012;106:909–11.
17. Mowrer JL, Tapp H, Ludden T, *et al.* Patients' and providers' perceptions of asthma and asthma care: a qualitative study. *J Asthma* 2015;52:949–56.
18. Kahawati C, Smith L, Armour C. Goal setting by people with asthma – what do they want? *Aust Pharm* 2008;27:674–8.
19. Petrie KJ, Weinman J. Patients' perceptions of their illness: the dynamo of volition in health care. *Curr Dir Psychol Sci* 2012;21:60–5.
20. Pickles K, Eassey D, Reddel HK, *et al.* "This illness diminishes me. What it does is like theft": a qualitative meta-synthesis of people's experiences of living with asthma. *Health Expect* 2018;21:23–40.
21. Eassey D, Reddel HK, Foster JM, *et al.* "...I've said I wish I was dead, you'd be better off without me": A systematic review of people's experiences of living with severe asthma. *J Asthma* 2018;1–12.
22. Cheung MMY, Saini B, Smith L. Drawing asthma: an exploration of patients' perceptions and experiences. *J Asthma* 2018;55:284–93.
23. Kaplan A, Price D. Matching inhaler devices with patients: the role of the primary care physician. *Can Respir J* 2018;2018:1–9.
24. Ding B, Small M, Scheffel G, *et al.* Maintenance inhaler preference, attribute importance, and satisfaction in prescribing physicians and patients with asthma, COPD, or asthma-COPD overlap syndrome consulting for routine care. *Int J Chron Obstruct Pulmon Dis* 2018;13:927–36.
25. Milosavljevic A, Aspden T, Harrison J. Community pharmacist-led interventions and their impact on patients' medication adherence and other health outcomes: a systematic review. *Int J Pharm Pract* 2018;26:387–97.
26. Welch M, Ludden T, Mottus K, *et al.* Patient and provider perspectives on uptake of a shared decision making intervention for asthma in primary care practices. *J Asthma* 2018;1–11.
27. Lenzen SA, Daniëls R, van Bokhoven MA, *et al.* What makes it so difficult for nurses to coach patients in shared decision making? A process evaluation. *Int J Nurs Stud* 2018;80:1–11.
28. Cheung MM, Saini B, Smith L. Using drawings to explore patients' perceptions of their illness: a scoping review. *J Multidiscip Health* 2016;9:631–46.
29. Guillemin M. Understanding illness: using drawings as a research method. *Qual Health Res* 2004;14:272–89.
30. Rose G. *Visual methodologies: an introduction to the interpretation of visual materials*. London: SAGE, 2001.
31. Cross K, Kabel A, Lysack C. Images of self and spinal cord injury: exploring drawing as a visual method in disability research. *Vis Stud* 2006;21:183–93.
32. Phillips J, Ogden J, Copland C. Using drawings of pain-related images to understand the experience of chronic pain: a qualitative study. *Br J Occup Ther* 2015;78:404–11.
33. Scott A. Illness meanings of AIDS among women with HIV: merging immunology and life experience. *Qual Health Res* 2009;19:454–65.
34. Colantonio A, Kontos PC, Gilbert JE, *et al.* After the crash: research-based theater for knowledge transfer. *J Contin Educ Health Prof* 2008;28:180–5.
35. Toye F, Jenkins S. 'It makes you think' - exploring the impact of qualitative films on pain clinicians. *Br J Pain* 2015;9:65–9.
36. Kendall E, Ehrlich C, Sunderland N, *et al.* Self-managing versus self-management: reinvigorating the socio-political dimensions of self-management. *Chronic Illn* 2011;7:87–98.
37. Entwistle VA, Cribb A, Owens J. Why health and social care support for people with long-term conditions should be oriented towards enabling them to live well. *Health Care Anal* 2018;26:48–65.
38. Morgan HM, Entwistle VA, Cribb A, *et al.* We need to talk about purpose: a critical interpretive synthesis of health and social care professionals' approaches to self-management support for people with long-term conditions. *Health Expect* 2017;20:243–59.
39. Potash JS, Ho RT, Chick JK, *et al.* Viewing and engaging in an art therapy exhibit by people living with mental illness: implications for empathy and social change. *Public Health* 2013;127:735–44.
40. de la Croix A, Rose C, Wildig E, *et al.* Arts-based learning in medical education: the students' perspective. *Med Educ* 2011;45:1090–100.
41. Yang KT, Yang JH. A study of the effect of a visual arts-based program on the scores of Jefferson Scale for Physician Empathy. *BMC Med Educ* 2013;13:142.
42. Zazulak J, Halgren C, Tan M, *et al.* The impact of an arts-based programme on the affective and cognitive components of empathic development. *Med Humanit* 2015;41:69–74.
43. Hojat M, Mangione S, Nasca TJ, *et al.* The Jefferson scale of physician empathy: development and preliminary psychometric data. *Educ Psychol Meas* 2001;61:349–65.
44. Martin CM, Félix-Bortolotti M. Person-centred health care: a critical assessment of current and emerging research approaches. *J Eval Clin Pract* 2014;20:1056–64.
45. McMillan SS, Kendall E, Sav A, *et al.* Patient-centered approaches to health care: a systematic review of randomized controlled trials. *Med Care Res Rev* 2013;70:567–96.
46. Légaré F, Ratté S, Gravel K, *et al.* Barriers and facilitators to implementing shared decision-making in clinical practice: update of a systematic review of health professionals' perceptions. *Patient Educ Couns* 2008;73:526–35.
47. Luxford K, Safran DG, Delbanco T. Promoting patient-centered care: a qualitative study of facilitators and barriers in healthcare organizations with a reputation for improving the patient experience. *Int J Qual Health Care* 2011;23:510–5.